CLAIMS

What is claimed is:

1. A method comprising:

individually sensing airflow of each of a first and second breathing orifice of a patient; and

delivering therapeutic gas to one of the first and second breathing orifice exhibiting greater airflow.

2. The method as defined in claim 1 wherein the first and second orifice are selected from the group comprising the left naris, right naris and mouth.

3. The method as defined in claim 1 wherein the sensing and delivery take place during the same inhalation.

4. The method as defined in claim 1 wherein the sensing and delivery take place during different inhalations.

5. The method as defined in claim 1 wherein delivering further comprises:

delivering therapeutic gas to the first breathing orifice in an amount proportional to the airflow of the first orifice; and

delivering therapeutic gas to the second orifice in an amount proportional to the airflow of the second orifice.

6. The method as defined in claim 5 wherein the delivering steps each further comprise delivering an amount directly proportional to airflow.

7. The method as defined in claim 1 further comprising:

wherein sensing further comprises sensing airflow of a third breathing orifice of the patient; and

wherein delivering further comprises delivering therapeutic gas to one of the first, second and third breathing orifice exhibiting greater airflow.

8. The method as defined in claim 7 wherein delivering further comprises delivering therapeutic gas to the first, second and third breathing orifices in an amount proportional to the airflow of the first, second and third breathing orifices respectively.

9. A system comprising:

a control system;

first and second sensors coupled to the control system;

a first valve coupled to the control system and the first sensor, wherein in one valve position the first valve fluidly couples a source of therapeutic gas to a common port of the first valve, and in a second valve position the first valve fluidly couples the first sensor to the common port of the first valve, and wherein the common port of the first valve configured to fluidly couple to a first breathing orifice of a patient;

a second valve coupled to the control system and the second sensor, wherein in one valve position the second valve fluidly couples a source of therapeutic gas to a common

port of the second valve, and in a second valve position the second valve fluidly couples the second sensor to the common port of the second valve, and wherein the common port of the second valve configured to fluidly couple to a second breathing orifice of the patient; and

wherein the control system determines a first and second sensed parameter indicative of airflow of the first and second breathing orifices using the first and second sensors, wherein the control system commands the first valve to supply therapeutic gas to the common port of the first valve only if the first sensed parameter indicates the presence of airflow, and wherein the control system commands the second valve to supply therapeutic gas to the common port of the second valve only if the first sensed parameter indicates the presence of airflow.

10. The system as defined in claim 9 wherein the control system determines the first sensed parameter and commands the first valve to supply therapeutic gas in the same inspiration of the patient.

11. The system as defined in claim 9 wherein the control system determines the first sensed parameter and commands the first valve to supply therapeutic gas in different inspirations of the patient.

12. The system as defined in claim 9 further comprising wherein the first sensor is a pressure sensor, and wherein the first sensed parameter is a pressure indicative of airflow.

13. The system as defined in claim 9 further comprising wherein the first sensor is a flow sensor, and wherein the first sensed parameter is at least a portion of the airflow of the first breathing orifice.

14. The system as defined in claim 9 wherein the control system commands the first valve to provide therapeutic gas flow in proportion to the first sensed parameter.

15. The system as defined in claim 14 wherein the control system commands the first valve to provide therapeutic gas flow in direct proportion to the first sensed parameter.

16. The system as defined in claim 9 further comprising:

wherein the control system further comprises a processor;

wherein the first sensor further comprises an output signal line coupled to the processor; and

wherein the first valve further comprises a control input signal coupled to the processor, and wherein the processor commands the valve by way of the control input signal line.

17. A method comprising:

sensing airflow of a patient's first and second naris individually;

delivering therapeutic gas to the first naris in proportion to the airflow of the first naris; and

delivering therapeutic gas to the second naris in proportion to the airflow of the second naris.

18. The method as defined in claim 17 wherein delivering further comprises delivering to a naris only if the naris is open to airflow.

19. The method as defined in claim 17 wherein the sensing and delivering steps take place during the same inspiration.

20. The method as defined in claim 17 wherein the sensing and delivering steps take place during different inspirations.

21. The method as defined in claim 17 wherein sensing further comprises:

sensing a pressure indicative of airflow of the first naris; and

sensing a pressure indicative of airflow of the second naris.

22. The method as defined in claim 17 wherein sensing further comprises:

sensing at least a portion of the airflow of the first naris; and

sensing at least a portion of the airflow of the second naris.

23. The method as defined in claim 17 wherein the delivering steps further comprise delivering therapeutic gas in direct proportion to airflow.

24. The method as defined in claim 17 further comprising:

storing data regarding airflow of the patient's nares; and

delivering the data external requestors.

25. A therapeutic gas delivery system comprising:

a gas port adapted to coupled to a source of therapeutic gas;

a first narial port adapted to couple to a first naris of a patient;

a second narial port adapted to couple to a second naris of the patient; and

wherein the therapeutic gas delivery system fluidly couples the gas port to the first narial port if airflow through the first naris is sensed, and wherein the therapeutic gas deliver system further fluidly couples the gas port to the second narial port if airflow through the second naris is sensed.

26. The therapeutic gas delivery system as defined in claim 25 wherein the therapeutic gas delivery system couples the gas port to the first and second narial ports for delivery of therapeutic gas in continuous fashion, and periodically decouples the gas port from one or both of the first and second narial port to sense airflow.

27. The therapeutic gas delivery system as defined in claim 25 wherein the therapeutic gas delivery system senses airflow during an inhalation of the patient, and fluidly couples the gas port to the first narial port if airflow is sensed through the first naris during the inhalation, and further fluidly couples the gas port to the second narial port if airflow is sensed through the second naris during the inhalation.

28. The therapeutic gas delivery system as defined in claim 25 further configured to fluidly couple the gas port to the first narial port and provide a therapeutic gas flow proportional to the airflow through the first naris, and configured to fluidly couple the gas port to the second narial port and provide a therapeutic gas flow proportional to airflow through the second naris.

29. The therapeutic gas delivery system as defined in claim 28 further configured to fluidly couple the gas port to the first narial port and provide a therapeutic gas flow in direct proportion to the airflow through the first naris, and configured to fluidly couple the gas port to the second narial port and provide a therapeutic gas flow in direct proportion to airflow through the second naris

30. The therapeutic gas delivery system as defined in claim 25 further comprising:

an oral port adapted to couple to the mouth of the patient; and

wherein the therapeutic gas delivery system fluidly couples the gas port to the oral port if airflow is sensed through the mouth of the patient.

31. The therapeutic gas delivery system as defined in claim 30 wherein if airflow is sensed in each of the first naris, the second naris and the mouth, the therapeutic gas delivery system is configured to couple the gas port to the first narial port, the second narial port and the oral port in a rotating fashion.

32. A method comprising:

measuring airflow of a first naris of a patient, and providing therapeutic gas to the first naris based on the measuring; and

measuring airflow of a second naris of the patient, and providing therapeutic gas to the second naris based on the measuring of the second naris.

33. The method as defined in claim 32 wherein the providing steps further comprise providing a bolus of therapeutic gas, and wherein the volume of the bolus is divided between the first and second naris based on the results of their respective measuring steps.

34. The method as defined in claim 32 wherein the providing steps further comprise providing therapeutic gas at a total flow rate, and wherein the total flow rate is the sum of a flow rate provided to the first naris and a flow rate provided to the second naris based on their respective measuring steps.

35. A therapeutic gas delivery system comprising:

a first sensor and first valve coupled to a first narial port, the first narial port configured to couple to a first naris of a patient;

a second sensor and second valve coupled to a second narial port, the second narial port configured to couple to a second naris of the patient; and

wherein the first sensor senses airflow of the first naris with the first valve in one position, and with the first valve in another position the first valve couples therapeutic gas to the first narial port;

wherein the second sensor senses airflow of the second naris with the second valve in one position, and with the second valve in another position the second valve couples therapeutic gas to the second narial port;

wherein the therapeutic gas delivery system only delivers therapeutic gas to the first naris if airflow is sensed in the first naris, and only delivers therapeutic gas to the second naris if airflow is sensed in the second naris.

36. The therapeutic gas delivery system as defined in claim 35 wherein, if airflow is sensed in both the first and second naris, the therapeutic gas delivery system alternates delivery of therapeutic gas to the first and second narial ports.

37. The therapeutic gas delivery system as defined in claim 35 further comprising:

said first valve configured to control a volume of therapeutic gas coupled to the first narial port, the volume based on the airflow of the first naris; and

said second valve configured to control a volume of therapeutic gas coupled to the second narial port, the volume based on the airflow of the second naris.

38. The therapeutic gas delivery system as defined in claim 37 wherein a total volume delivered to the combined first and second narial ports is controlled.

39. The therapeutic gas delivery system as defined in claim 35 wherein the first and second valves couple therapeutic gas to their respective nares for continuous mode operation, and periodically couple the first and second sensors to sense airflow.

40. A system comprising:

a processor;

a first sensor having an output signal line coupled to the processor;

a second sensor having an output signal line coupled to the processor;

a first valve having a control input signal line coupled to the processor, wherein in one valve position the first valve fluidly couples a source of therapeutic gas to a common port of the first valve, and in a second valve position the first valve fluidly couples the first sensor to the common port of the first valve, and wherein the common port of the first valve configured to fluidly couple to a first breathing orifice of a patient;

a second valve having a control input signal line coupled to the processor, wherein in one valve position the second valve fluidly couples a source of therapeutic gas to a common port of the second valve, and in a second valve position the second valve fluidly couples the second sensor to the common port of the second valve, and wherein the common port of the second valve configured to fluidly couple to a second breathing orifice of the patient; and

wherein the processor is programmed to read the output signal lines of the first and second sensors to determine a first and second values indicative of airflow of the first and second breathing orifices respectively, wherein the processor is further programmed to assert the control input signal line to the first valve to supply therapeutic gas to the common port of the first valve only if the first value indicates the presence of airflow, and wherein the processor is further programmed to assert the control input signal line to the second valve to supply therapeutic gas to the common port of the second valve only if the second value indicates the presence of airflow.

41. The system as defined in claim 40 further comprising wherein the processor reads the output signal line of the first sensor and asserts the control input signal line of the first valve to supply therapeutic gas in the same inspiration of the patient.

42. The system as defined in claim 40 further comprising wherein the processor reads the output signal line of the first sensor and asserts the control input signal line of the first valve to supply therapeutic gas in the same different inspirations of the patient.

43. The system as defined in claim 40 further comprising wherein the first sensor is a pressure sensor, and wherein the first value is a pressure indicative of airflow.

44. The system as defined in claim 40 further comprising wherein the first sensor is a flow sensor, and wherein the first value is a value representing at least a portion of the airflow of the breathing orifice.

45. The system as defined in claim 40 wherein the processor pulse-width modulates the control input signal lines to provide therapeutic gas flow in proportion to the first and second values.

46. The system as defined in claim 45 wherein the processor pulse-width modulates the control input signal lines to provide therapeutic gas flow in direct proportion to the first and second values.